Phytodiversity of sacred groves in Jhargram and its Ethnomedicinal Uses

SYNOPSIS

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Research Supervisor
Dr. Arpana Sharma
Associate Professor
Department of Botany, Science
YBN University, Ranchi

Research Scholar
Somnath Bandopadhya
Enrollment No.: YBNU2201140
Department of Botany, Science
YBN University, Ranchi

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INTRODUCTION

Jhargram is a district of West Bengal that is located in the southern part of the state. Total area is almost 3,037.64 km^2 out of which forest cover is 602 sq km. Jhargram is located at 22'45° N 86'98° E.It has an average elevation of 81 meters. Ancient deities with different rituals, large forest cover are key attraction of this district. Weather is humid and tropical thoughout the year.

Both tribal and non-tribal people are celebrated 'Paus sankranti' around sacred groves of Jhargram. Local people save the valuable biodiversity around it.

There are several plants that are used as therapeutic, fodder, food. It also helped to preserving water sources, preventing soil erosion and balancing local climate condition.

Now-a-days it continuously faces a major problems like deforestation, agriculture, modernization.

Various approaches are being made to revive and protect sacred grove including legal protection, community based programme.

Sacred groves are found all over the world including Africa, South East Asia and India. Different unique practices and tradition are observed. In west Bengal many rituals like 'Badhna Parab','Kurmi Parab' are linked with sacred groves.

REVIEW OF LITERATURE

International Convention on Biological Diversity (CBD) announced sacred groves as heritage sites.These areas exhibit microclimatic conditions with their exclusive flora and fauna. The sacred groves has to be maintained for their socio-economic, ethno botanical and ecological values. [1]

Folk culture and spiritualities are linked with sacred groves, but many of them now become part of mainstream religions. Sacred groves are the sites where religions meet with nature. They are protected over long period of time. Many of them show high biodiversity that need high conservation. [5]

The key interest of sacred groves conservation is to maintaining ecological dynamics, habitats, and ecosystem. How folk culture is help to maintain such valuable biodiversity has been seen through sacred groves.[6]

Patches of forest vegetation with enriched biodiversity are called as sacred grove. Local communities for centuries based on social sanctions, religious beliefs and taboos that the deities staying in them would save the adjoining people from adverse calamities. [7]

Ancient cultural values can be represented by sacred groves. Indigenous, mainstream religions and local community show a great bonding with nature through sacred groves. [10]

Sacred groves are connected with livelihoods in various ways and many different rituals show association with them. [11]

Small sacred groves provide shelter to old and extensive spices of climbers and trees. They also give protection of keystone species. [12]

Sacred groves are matchless habitat that acts as reservoir of genetic resources and biodiversity. They contain various types of medicinal plants which is beneficial for local people. The groves also act repositories of and threatened, rare, endangered plants. [13]

Deities were presume by ancient societies to reside in stones, , woods, animals and trees.This show respect for and gratitude to nature for delivering services to human civilization. Sacred groves are small patch of forest that are protected by the indigenous communities. [14]

Nature and natural resources conservation is a main part of cultural stability especially in remote rural areas of the world. Indigenous communities worship nature."Mela" was arranged in sacred groves that providing economical benefits to local people. [16]

From pre-Vedic age India show an ancient tradition of protecting nature. Our rich heritage show various flora and fauna, enormous forest, mountains and rivers. Vedic literature poetically describes the beauty of India's forest. [17]

OBJECTIVE OF STUDY

A. Biodiversity Conservation-

Sacred groves are the ideal part for conservation of biodiversity. The sacredness, taboos and religious beliefs play a vital role in conservation of flora and fauna of the region.

B. Floristic Study-

Several plant species along with endangered ones are listed that help to understand the vegetation of that place.

C. Ecological Services -

Biodiversity help to maintain balance of ecosystem. Regeneration of some endemic plants in sacred groves is higher than reserved forest. It also help in ground water recharging, nutrient recycling.

D. Medicinal Importance-

Several plant parts are used to cure various diseases. This medicine potentially show no side effects and help in treatment of varied age group people.

E. Economical Benefits-

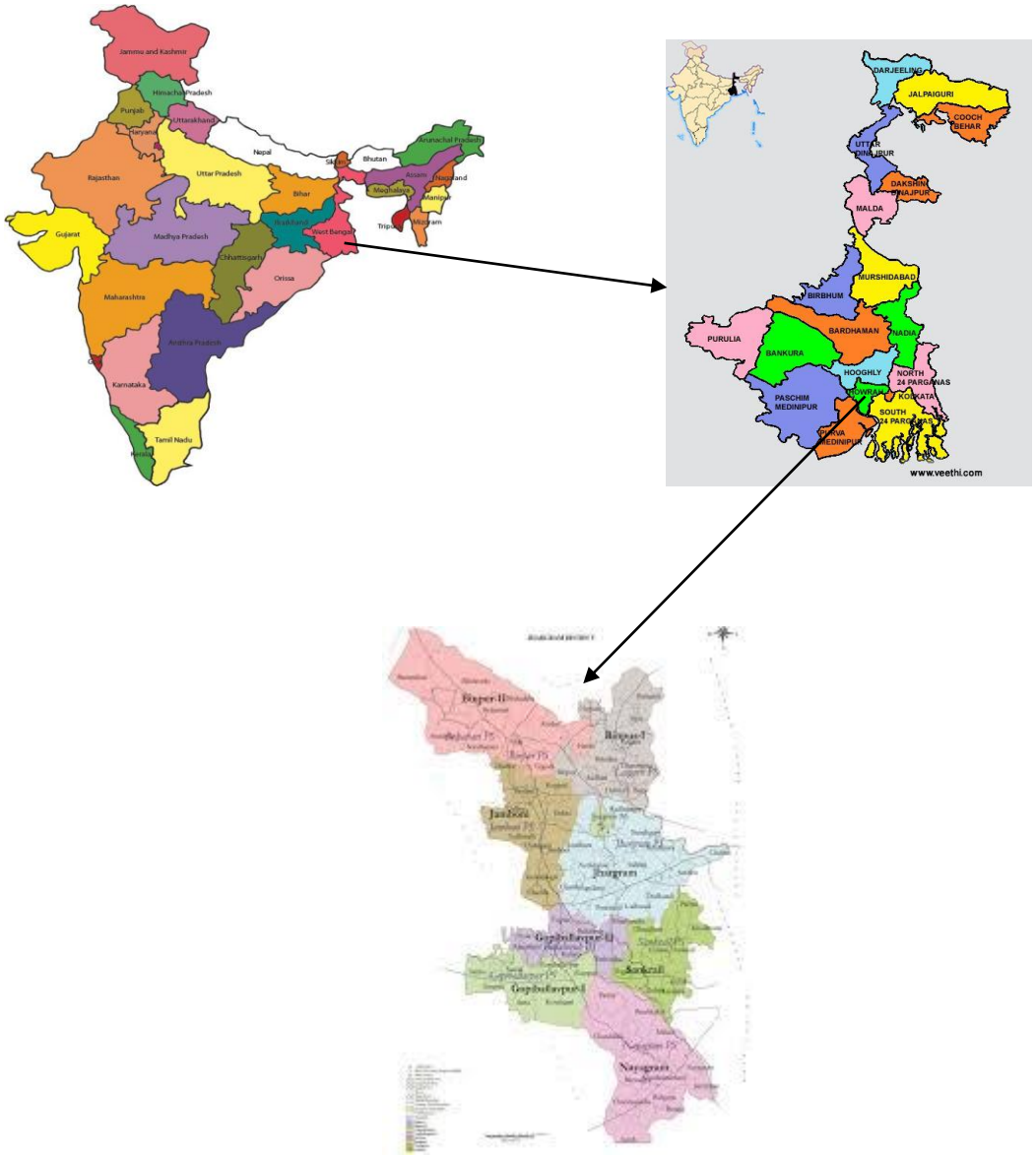
Plant material like leaf, root, stem, bark are help in making plant based products that are selling by villagers in festivals to make them self-sufficient.

SIGNIFICANCE OF STUDY-

In recent time sacred groves draw a great attention to the biologist, anthropologist, policy maker because these groves represent a variety of ecosystem, cultural tradition and ethnic identities.
Endangered plant species have great significance that is preserved by villagers. Conservation of sacred groves important not only for the sources of medicinal plants but also providing the basic herbal needs for the local people.

Sacred grove help in maintaining socio-cultural integrity of local communities and provide ecosystem services such as seed banks, carbon sinks, balancing o ground water cycle.

STUDY AREA



METHODOLOGY OF RESEARCH WORK

We collect different qualitative data from the sacred grove through a literature review. We downloaded papers related to sacred forest and tribes from Google scholar.

Different plant species with special reference to endangered plants are studied on different seasons,(summer-April, monsoon-August, and winter-December).Plants are collected from several groves and identified with the help of Bengal plants and Flora of British India. Local people around the sacred groves are asked to gain knowledge about medicinal importance and socio-cultural aspects of plants by asking following questions-

1. Name of the plant-

2. Parts used for herbal treatment-

3. purpose-

Questionnaire Sacred Groves Database (WWF Format, 1996)

Name of the sacred grove:
Village:
Geographical Information: Altitude Latitude Longitude
Size of the Grove:
Age of the Grove:
Any water Source: Yes / No
If yes, nature & duration of
Water source : Pond/well/stream/temporary/permanent
Nature of Shrine:
Presiding deity:
Minor deities:
Priest hood:
Offerings:
Votive offerings:
Imagines/I cones:
Metallic structures:
Rituals/Taboos/Beliefs:
Restriction to caste/Gender:
Dominant social group/Community:
Conservation status:
Ownership pattern: Trust/Joint family/Community
Frequency of offerings:
Distance from which people
Come to offer worship to the deity:
Material benefits from the SG:
Any restrictions exist: Yes/No
If yes: Fear of deity/ Traditional/Trust restriction/
Ignorance/Spirit

Are the outsiders involved in
the protection of Grove: Forest office/Priest/Political leaders/Community/Family/
/Neighbors
Changing Scenario:
Animals/ Birds/Insects:

Introduction of exotic plants/
commercially important plants:
Clearing of ground flora:
Sacred plant:
Annual festival:

Photograph of plants in sacred groves are taken by using camera and made herbarium if needed.

EXPECTED OUTCOME

Through a detailed investigation we will prepare a list of plants which have medicinal value as well as economic importance. Plant morphology will also studied. If there is any threat to these sacred groves that will also be measured. How sacredness affect the life of surrounding people will studied. Which plant parts used by the tribal people during 'puja' will also be prepared.

REFERENCES

1. CBD, 1995. Global Biodiversity Assessment. UNEP, Cambridge.

2. C. P. Kala, "Ethnobotanical and Ecological Approaches for Conservation of Medicinal and Aromatic Plants," Acta Horticulturae, Vol. 860, 2010, pp. 19-26

3. D. Khumbongmayum, M. L. Khan and R. S. Tripathi, "Sacred Groves of Manipur—Ideal Centres of Biodiver-sity Conservation," Current Science, Vol. 87, 2004, pp. 430-433.

4.Ghosh, A. (1997). Paschimbanglar udvid (Vol. 1). Botanical Survey o fIndia, Kolkata, 319pp.

5. Ghosh, A. (1998). Paschimbanglar udvid (Vol. 2). Botanical Survey of India, Kolkata, 373pp.

6. Ghosh, A. (2001). Paschimbanglar udvid (Vol. 3). Botanical Survey of India, Kolkata, 399pp.

7. Ghosh, A. (2005). Paschimbanglar udvid (Vol. 4). Botanical Survey of India, Kolkata, 409pp.

8. Jain, S.K. and Rao, R.R. (eds.). 1983. An Assessment of threatened Plants of India. Botanical Survey of India, Howrah.

9. Magurran A. 1988. Ecological Diversity and its Measurement. Princeton University Press, Princeton, New Jersey.

10. P. Joshi and Y. Shrivastava, "Drops of Nature Conserva-tion—Sacred Grove," Journal of Human Ecology, Vol. 11, No. 5, 2000, pp. 327-330.

11. Paria, N. (ed.) (2005). Medicinal plant resources of south West Bengal(Vol. 1), Research Wing, Directorate of Forests in collaboration with Department of Environment, Government of West Bengal, Kolkata,198pp

12. Rai, S.N., 1979. Gap regeneration in wet evergreen forest of Karnataka. Karnataka Forest Department Research Paper,KFD-2, 15 pp.

13. Ramakrishnan P.S., Saxena K.G. and Chandrashekara U.M. 1998. Conserving the Sacred for Biodiversity Management. Oxford and IBH publication Co Pvt Ltd, New Delhi, India.

14.Ramanujam, M.P. & Kadamban, D., Kumaravelu, G. and Praveenkumar, K. 2002. Sacred groves -an overview. In: Ethnobotany, P.C. Trivedi (ed.) Jaipur, India. pp 13 -53.

15. Sarin, Y.K. 2003. Medicinal plant raw materials for Indiandrug and pharmaceutical industry II. Problems andprospects of development of resources. Indian Forester 129(2): 143-153.

16. Tripathi, O.P., 2006. Fragmentation and plant diversity status of major forest types in Meghalaya, North East India. Indian Forester 132: 1598-1608.

17. Untawale, A.G., Wafar, S. and Warfer, M. 1998. Sacredmangroves in India. Pages 247-252, In: Ramakrishnan,P.S., Saxena, K.G. and Chandrashekara, U.M. (Editors)Conserving the Sacred for Biodiversity Management.UNESCO and Oxford-IBH Publishing, New Delhi.

18. Vartak, V.D. 1996. Sacred groves for in-situconservation In: Jain, S.K. (ed.) Ethnobotany in Human welfare. New Delhi, India. pp. 300 -302.

19. Whittaker R.H. 1972. Evolution and measurement of species diversity. Taxon 21: 213–251.